

IN THE CLAIMS

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (Currently Amended) A method of compressing image data into a fixed size memory, the image data being arranged into a plurality of scans of bitstream data, ~~[[said]]~~ the plurality of scans being ordered from a perceptually most significant scan to a perceptually least significant scan, each scan having associated therewith an attribute identifying whether the ~~scans are~~ scan is either active or inactive, the method comprising the steps of:

determining whether ~~[[said]]~~ the scans are active or inactive;

encoding the determined active scans of bitstream data and

discarding the determined inactive scans;

transferring the encoded scan bitstream data to the fixed size memory; and

setting, if the fixed size memory becomes full, the attribute of a currently least significant scan of the active scans to inactive.

2. (Currently Amended) A method according to claim 1, wherein the method further comprises the step of:

deleting, if the fixed size memory becomes full, the encoded scan bit-stream data of the currently least significant scan.

3. (Currently Amended) A method according to claim 1, wherein the method further comprises the steps of:

transforming the image;

~~quantising~~ quantizing the image, ~~wherein the quantising~~ said quantizing step ~~employs~~ employing bit-shifting operations; and

partitioning the ~~quantising~~ quantizing image into the plurality of scans of bitstream data.

4. (Currently Amended) A method according to claim 1, wherein said encoding step further comprises the ~~sub-step~~ step of:

entropy encoding the current scan of bitstream data, if the attribute of the current scan is active; otherwise:

proceeding to a next scan of bitstream data.

5. (Currently Amended) A method as claimed in claim 1, wherein the encoding step further comprises the ~~sub-steps~~ step of:

accessing a scan of bitstream data for encoding in accordance with a scan map.

6. (Currently Amended) A method as claimed in claim 1, wherein the image data comprises a plurality of ~~quantising~~ quantizing 8x8 blocks of DCT transformed image data, and wherein the scans comprise, at least for each color component of the ~~quantising~~ quantizing DCT transformed image data, two scans for the two least

insignificant bitplanes of the group of AC coefficients 1 to 32, and two scans for the two least insignificant bitplanes of the group of AC coefficients 33 to 63.

7. (Currently Amended) A method according to claim 1 wherein ~~[[said]]~~ the scans comprise DC most-significant scans, ~~[[;]]~~ DC refinement scans, ~~[[;]]~~ AC most-significant scans, and AC refinement scans.

8. (Currently Amended) A method according to claim 7, wherein one of ~~[[said]]~~ the DC most-significant scans is ~~[[said]]~~ the perceptually most significant scan and one of ~~[[said]]~~ the AC refinement scans is ~~[[said]]~~ the perceptually least significant scan.

9. (Currently Amended) A method according to claim 2, wherein ~~[[said]]~~ the image data comprises a plurality of color components and said deleting step ~~deletes~~ includes deleting corresponding encoded scan bit-stream data of more than one ~~[[said]]~~ color ~~components~~ component.

10. (Currently Amended) A method of compressing image data into a fixed size memory, the method comprising the steps of:

partitioning the image data into scans of bitstream data, wherein the scans are ordered from a perceptually most significant scan to a perceptually least significant scan and wherein the scans have associated therewith an attribute determining whether each scan is active or inactive;

determining whether [[said]] the scans are active or inactive;
encoding the determined active scans of bitstream data and
discarding the determined inactive scans;
transferring the encoded scan bitstream data to the fixed size
memory; and
setting, if the fixed size memory becomes full, the attribute of a
currently least significant scan of the active scans to inactive.

11. (Currently Amended) A method of storing coded image data of an
image in a storage of fixed memory size, wherein the image comprises a plurality of pixels
and the method comprises the steps of:

arranging the image into a plurality of bands each comprising a
predetermined number N of consecutive lines of pixels;

buffering and processing the bands one by one in turn, wherein
[[the]] said processing step comprises the following sub-steps for each currently buffered
band:

arranging the current band into a plurality of blocks of pixels
of size MxM, wherein M is equal to [[said]] the predetermined number N; and

transforming the blocks of pixels to produce respective
blocks of transform coefficients;

partitioning the blocks of transform coefficients into a plurality of
partitions wherein each partition comprises data from each block of transform coefficients
and at least one partition comprises data from at least one but not all bit-planes of each

block of transform coefficients, and wherein the plurality of partitions comprise a perceptually significant partition and a perceptually insignificant partition and partitions of varying perceptual significance therebetween, and wherein the partitions have associated therewith an attribute determining whether the partition is active or inactive;

entropy coding each active partition while discarding the inactive partitions; and

managing the storing of the [[said]] entropy coded partitions in the storage of fixed memory size, wherein, during the storing of [[said]] the entropy coded partitions, if it is determined that the storage is full a coded least perceptually significant partition currently stored in the storage is overwritten by data from a coded more perceptually significant partition, and the attribute of the overwritten perceptually least significant scan is set to inactive.

12. (Currently Amended) Apparatus for compressing image data into a fixed size memory, the image data being arranged into a plurality of scans of bitstream data, [[said]] the plurality of scans comprising a perceptually most significant scan to a perceptually least significant scan, and each scan [[has]] having associated therewith an attribute identifying whether the scan is ~~scans are~~ active or inactive, the apparatus comprising:

means for determining whether [[said]] the scans are active or inactive;

means for encoding the determined active scans of bitstream data and discarding the determined inactive scans;

means for transferring the encoded scan bitstream data to the fixed size memory; and

means for setting, if the fixed size memory becomes full, the attribute of a currently least significant scan to inactive.

13. (Currently Amended) Apparatus for compressing image data into a fixed size memory, the apparatus comprising:

means for partitioning the image data into scan bitstream data, wherein the scans are ordered from a perceptually most significant scan to a perceptually least significant scan and wherein the scans have associated therewith an attribute determining whether a scan is active or inactive;

means for determining whether the scans are active or inactive;

means for encoding the determined active scans of bitstream data and discarding the determined inactive scans;

means for transferring the encoded scan bitstream data to the fixed size memory; and

means for setting, if the fixed size memory becomes full, the attribute of a currently least significant scan of the active scans to inactive.

14. (Currently Amended) Apparatus for storing coded image data of an image in a storage of fixed memory size, wherein the image comprises a plurality of pixels and the apparatus comprises:

means for arranging the image into a plurality of bands each comprising a predetermined number N of consecutive lines of pixels;

means for buffering and processing the bands one by one in turn, wherein the processing means comprises:

means for arranging a currently buffered band into a plurality of blocks of pixels of size $M \times M$, wherein M is equal to said predetermined number N; and

means for transforming the blocks of pixels to produce respective blocks of transform coefficients;

means for partitioning the blocks of transform coefficients into a plurality of partitions wherein each partition comprises data from each block of transform coefficients and at least one partition comprises data from at least one but not all bit-planes of each block of transform coefficients, and wherein the plurality of partitions comprise a perceptually significant partition and a perceptually insignificant partition and partitions of varying perceptual significance there between, and wherein the partitions have associated therewith an attribute determining whether the partition is active or inactive;

means for entropy coding each active partition and discarding each inactive partition; and

means for managing the storing of the [[said]] entropy coded partitions in the storage of fixed memory size, wherein during the storing of [[said]] the entropy coded partitions, if it is determined that the storage is full a coded least perceptually significant partition currently stored in the storage is overwritten by data from a coded more perceptually significant partition, and the attribute of the overwritten perceptually least significant scan is set to inactive.

15. (Currently Amended) A computer program product comprising ~~machine-readable~~ computer readable program code recorded on a machine-readable recording medium, for controlling the operation of a data processing apparatus on which the program code executes to perform a method of compressing image data into a fixed size memory, the image data being arranged into a plurality of scans of bitstream data, [[said]] the plurality of scans ordered from a perceptually most significant scan to a perceptually least significant scan, each scan having associated therewith an attribute identifying whether the scans are active or inactive, the method comprising the steps of:

- determining whether [[said]] the scans are active or inactive;
- encoding the determined active scans of bitstream data and
- discarding the determined inactive scans;
- transferring the encoded scan bitstream data to the fixed size memory; and
- setting, if the fixed size memory becomes full, the attribute of a currently least significant scan of the active scans to inactive.

16. (Currently Amended) A computer program product comprising ~~machine-readable~~ computer readable program code recorded on a machine-readable recording medium, for controlling the operation of a data processing apparatus on which the program code executes to perform a method of compressing image data into a fixed size memory, the method comprising the steps of:

- partitioning the image data into scans of bitstream data, wherein the scans are ordered from a perceptually most significant scan to a perceptually least

significant scan and wherein the scans have associated therewith an attribute determining whether each scan is active or inactive;

determining whether ~~[[said]]~~ the scans are active or inactive;

encoding the determined active scans of bitstream data and

discarding the determined inactive scans;

transferring the encoded scan bitstream data to the fixed size memory; and

setting, if the fixed size memory becomes full, the attribute of a currently least significant scan of the active scans to inactive.

17. (Currently Amended) A computer program product comprising ~~machine-readable~~ computer readable program code recorded on a machine-readable recording medium, for controlling the operation of a data processing apparatus on which the program code executes to perform a method of storing coded image data of an image in a storage of fixed memory size, wherein the image comprises a plurality of pixels and the method comprises the steps of:

arranging the image into a plurality of bands each comprising a predetermined number N of consecutive lines of pixels;

buffering and processing the bands one by one in turn, wherein the processing step comprises the following sub-steps for each currently buffered band:

arranging the current band into a plurality of blocks of pixels of size MxM, wherein M is equal to said predetermined number N; and

transforming the blocks of pixels to produce respective blocks of transform coefficients;

partitioning the blocks of transform coefficients into a plurality of partitions, wherein each partition comprises data from each block of transform coefficients and at least one partition comprises data from at least one but not all bit-planes of each block of transform coefficients, ~~and wherein~~ the plurality of partitions comprise a perceptually significant partition and a perceptually insignificant partition and partitions of varying perceptual significance therebetween, and ~~wherein~~ the partitions have associated therewith an attribute determining whether the partition is active or inactive;

entropy coding each active partition and discarding the inactive partitions;

and

managing the storing of the ~~said~~ entropy coded partitions in the storage of fixed memory size, wherein, during the storing of said entropy coded partitions, if it is determined that the storage is full a coded least perceptually significant partition currently stored in the storage is overwritten by data from a coded more perceptually significant partition, and the attribute of the overwritten perceptually least significant scan is set to inactive.

18. (Currently Amended) A system for compressing image data arranged into a plurality of scans of bitstream data, the plurality of scans being ordered from a perceptually most significant scan to a perceptually least significant scan, the system comprising:

a fixed-size memory;

a storage unit for storing information relating to [[said]] the scans,
the information comprising an attribute associated with each scan to identify the scan as
active or inactive; and

a processor connected to said fixed-size memory and said storage
unit and adapted to compress [[said]] the image data into said fixed-size memory, wherein
said processor:

determines whether [[said]] the scans are active or inactive;

encodes the determined active scans of bitstream data and

discards the determined inactive scans;

transfers the encoded scan bitstream data to the fixed size
memory; and

sets, if the fixed size memory becomes full, the attribute of a
currently least significant scan of the active scans to inactive.